[0035] **ABSTRACT OF THE DISCLOSURE**

[0036] A uniform, controllable method for electrochemically roughening an aluminum-comprising surface to be used in a semiconductor processing apparatus is disclosed Typically the aluminum-comprising surface is aluminum or an aluminum alloy. The method involves immersing an aluminum-comprising surface in an HCl solution having a concentration ranging from about 1 volume % to about 5 volume %, at a temperature within the range of about 45°C to about 80°C, then applying an electrical charge having a charge density ranging from about 80 amps/ft.^{2} to about 250 amps/ft.^{2} for a time period ranging from about 4 minutes to about 25 minutes. A chelating agent may be added to enhance the roughening process. The electrochemical roughening method can be used on aluminum alloys in general, including but not limited to 6061 and LP. The electrochemical roughening provides a smoothly rolling surface which does not entrap particles and which provides increased surface area for semiconductor process byproduct adhesion. The roughened surface provides an excellent surface for subsequent anodization.